

Honeywell

ADS-B OUT RETROFIT FOR THE EMBRAER E-JET FAMILY



Overview

Honeywell is pleased to offer operators of the Embraer E-Jet family a fully compliant upgrade to meet the worldwide mandates for Automatic Dependent Surveillance-Broadcast (ADS-B) Out.

Honeywell has partnered with Embraer for the ADS-B Out retrofit solution outlined in this document. Operators should contact Embraer for Service Bulletins 170-34-0034 and 190-34-0030 which add ADS B Out functionality to the E-Jet 170/175 and 190/195 aircraft respectively.

Further Information

Complete details on this solution including Honeywell equipment modification acquisition and scheduling are available from your Honeywell Avionics Technical Sales Manager. Contact your Embraer ECAM/CAM for Service Bulletin information and pricing.

The purpose of this document is to inform our customers of the availability of a fully compliant upgrade for the Honeywell Epic avionics suite on the Embraer E170/E175/E190/E195 Regional Aircraft to meet the FAA's mandate for Automatic Dependent Surveillance-Broadcast (ADS-B) Out. The solution outlined in this bulletin meets not only the FAA mandate, but mandates for the improved surveillance technology that are being implemented worldwide.

This upgrade provides cost-effective modification to the transponders, GPS receivers and other equipment necessary to comply with the FAA mandate and continue to operate the aircraft, with no operational restrictions or exemptions required, beyond the January 1, 2020 mandate.

ADS-B Out and NextGen Mandates

ADS-B Out is an integral part of the FAA's NextGen program, which is designed to modernize air traffic control and surveillance to improve the operational efficiency of aviation in the United States National Airspace System.

By January 1, 2020 all aircraft operating in controlled airspace will need updated equipment to satisfy these NextGen requirements. In addition to upgrading the transponder to DO-260B-compliance, the FAA ADS-B Out standards outline requirements for position accuracy and integrity performance that exceed the capabilities of the original GPS Modules (PN 245-604067-001). As part of the ADS-B Out upgrade, the GPS modules are upgraded to an SBAS compliant version (PN PN 245-604067-100) for aircraft that have not been upgraded previously. The GPS upgrade fully complies with the US mandate, the most stringent of existing ADS-B Out mandates, along with adding support for LPV approach and other functionalities available with the recently certified Epic 27.1 Load.



Honeywell Upgrade Solution

By maintaining the integrity of the integrated avionics system with DO-260B Transponders and SBAS-capable GPS sensors required for ADS-B Out, E-Jet operators benefit from enhanced availability of all GPS-based operations such as RNAV and RNP. Additionally, this upgrade path is well aligned to future options desired by many operators, such as enhanced approach and landing operations with Localizer Performance with Vertical Guidance (LPV) and Low RNP (below RNP 0.3 on final, 1 RNP on missed approach), options with Epic Load 27.1 that has recently certified.

This solution includes a GPS sensor upgrade that achieves full compliancy with the Navigational Accuracy Category for position (NACp) and Navigational Integrity Category (NIC) requirements in § 91.227 of Title 14, United States Code of Federal Regulations (14 CFR) for Automatic Dependent Surveillance-Broadcast (ADS-B) Out. It provides a cost-effective solution that is available today for operators worldwide seeking a solution for their E-Jet fleet in preparation for the retrofit mandates becoming effective.

Aircraft Modifications Required for ADS-B Out

The ADS-B out retrofit consists of modifications to the Transponder module for DO-260B compliance, upgrade to the GPS receivers and antennas to provide SBAS capability, along with the installation of a new APM that enables the ADS-B Out function on the aircraft. Complete details of the aircraft modifications required for ADS-B Out retrofits are outlined in the Service Bulletins available from Embraer. The remainder of this document will focus on the Honeywell-provided components which include Transponder and GPS modifications, along with the new APM.



Honeywell Modification Description & 2016 Pricing

PRIMUS EPIC Software System LOAD 25.3 PN PS7027709-00304, or LOAD 25.4

PN PS7027709-00305, or higher must be installed prior to proceeding with the ADS-B Out installation.

The following outlines the required Honeywell equipment and modifications along with Operator List pricing:

1. Transponder Upgrade to DO-260B Compliant PN 7517402-970

The transponder modules (2 per aircraft) are updated to full DO-260B compliance. Aircraft not equipped with the 7517402-970 transponder will have transponders with one of the PNs in the table below. Modification to the 7517402-970 is performed by Honeywell, at the prices outlined based on the pre-conversion PN.

| PRE-CONVERSION PNS | POST-CONVERSION PN | 2016 MODIFICATION PRICE (EACH) |
|----------------------------|--------------------|--------------------------------|
| 7517400-876 7517400-877 | 7517402-970 | \$8,463.09 |
| 7517400-950 7517401-960 | 7517402-970 | \$2,054.27 |

2. GPS Module Upgrade to SBAS-compliant

The GPS modules (2 per aircraft) are updated to be compliant with SBAS capability. The Embraer Service Bulletin includes the replacement of the GPS Antennas required by the SBAS modules.

| PRE-CONVERSION PNS | POST-CONVERSION PN | 2016 MODIFICATION PRICE (EACH) |
|--------------------|--------------------|--------------------------------|
| 245-604067-001 | 245-604067-100 | \$4,217.74 |

3. Aircraft Personality Module Update

In addition to the transponder and GPS modifications, ADS-B Out functionality is enabled through an APM parameter modification, requiring a new APM be installed on the aircraft. The ADS-B Out Activation APM is provided by Honeywell and installed as directed by the Embraer Service Bulletin. Each aircraft enabled for ADS-B Out requires the APM modification. The 2016 price per APM modification for ADS-B Out is \$11,045.04.

For More Information

To learn more about Honeywell's suite of RMU's, please contact your Honeywell Account or Sales Representative.

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